

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO.

WASTE DISCHARGE REQUIREMENTS
FOR
WEIMAR INSTITUTE, INC.
WASTEWATER TREATMENT FACILITY
PLACER COUNTY

The California Regional Water Quality Control Board, Central Valley Region (hereafter Regional Board), finds that:

1. The Weimar Institute, Inc. (hereafter Discharger) submitted a Report of Waste Discharge (RWD) dated 13 August 2004 for updating Waste Discharge Requirements (WDRs) for the Weimar Institute Wastewater Treatment Facility. Supplemental information was received on 29 November 2004.
2. For the purposes of this Order, the term “wastewater treatment facility” (WWTF) shall mean the sewage collection and transport system, the wastewater treatment system, the wastewater storage ponds, and the effluent disposal system.
3. WDRs Order No. 95-179, adopted by the Regional Board on 23 June 1995, prescribes requirements for the Discharger’s WWTF. This Order is neither adequate nor consistent with the current plans and policies of the Regional Board.
4. The Weimar Institute WWTF is on Assessors Parcel Numbers 72-100-12, 72-110-01, 72-120-01, 72-130-02, 72-130-13, 72-170-02, and 72-180-10. The facility is located approximately 10 miles east of City of Auburn adjacent to Interstate 80 in Weimar, in Section 28, T14N, R9E, MDB&M, as shown on Attachment A, which is attached hereto and made part of this Order by reference.
5. The most recent population (September 2003 to September 2004) at the Weimar Institute is approximately 224 persons. Over the last 10 years the population has ranged from approximately 208 to 224 persons. Population surveys conducted in 1985 and 1988 showed 288 and 274 persons, respectively. The maximum average annual population is projected to be less than 300 persons during the next ten years based on current school and health programs.

Wastewater Treatment System

6. The RWD states that the WWTF currently treats a monthly average wastewater flow of approximately 22,400 gallons per day (gpd) of domestic wastewater. This is based on an average population of 224 persons and an average flow of 100 gallons per person per day. Monthly monitoring reports from September 2002 through December 2004 show that the weekly average inflow to wastewater ponds is 22,524 gpd; however, not all flows are currently monitored.
7. The WWTF consists of a collection system, Imhoff tank, trickling filter, three wastewater oxidation ponds, and subsurface disposal via two leachfields. Attachment B, which is attached hereto and made part of this Order by reference, depicts the treatment plant, wastewater storage ponds, and the two leachfields.

8. The collection system consists of two gravity collection systems (Campus Collection System Branch, and the Academy Center and Residential Duplexes Collection System Branch). The Campus Collection System Branch consists of approximately 8,000 feet of clay tile, Orangeburg, cast iron, asbestos cement, and plastic pipe materials ranging in size from four to eight inches. Two and three inch diameter pipe may also be found between some of the buildings and the collection system. The RWD states that between 800 and 1,600 feet of this sewer line has been replaced with SDR35 PVC sewer pipe since 1983. The Academy Center and three Residential Duplexes are served by 4-inch SDR35 PVC sewer pipe that was installed in 1983.
9. Wastewater from the Campus Sewage Collection Branch Collection system flows into an Imhoff tank. The Imhoff tank consists of a large rectangular concrete tank with a sloping center baffle that provides primary sewage treatment by separating the solids from the liquid. The total area of the tank is approximately 861 cubic feet and the clarifier area is approximately 287 square feet. A dosing chamber, attached to the discharge end of the Imhoff tank, receives 600-gallon effluent doses that are measured using an electronic counter. Effluent from the dosing chamber enters the trickling filter where it receives biological treatment. From the trickling filter, the effluent can be discharged to either Pond No. 1 or Pond No. 2.
10. Wastewater from the Academy Center and the Residential Duplexes Collection system enters a series of four septic tanks prior to being discharged to Pond No. 1. Wastewater from this system, which is approximately 10 percent of the total flow, does not enter the Imhoff tank or the trickling filter and is not currently metered. The Discharger indicates that the septic tank located adjacent to the Academy Center was last pumped in November 2004. The RWD indicates that the other three tanks, one for each of the three residential duplexes, have not been located.

Wastewater Treatment Facility

11. The effluent disposal system consists of three wastewater storage ponds and two separate leachfields (upper and lower leachfields).
12. The physical characteristics of the wastewater ponds are as follows:

<u>Parameter</u>	<u>Pond No. 1</u>	<u>Pond No. 2</u>	<u>Pond No. 3</u>
Maximum Depth (feet)	7	11	12
Minimum Depth (feet)	4	3	2
Volume with 2-feet of freeboard (gallons)	1,397,000	1,941,500	3,427,600

13. The RWD states that all storm water inflow is diverted away from the ponds. This is accomplished by an engineering design requirement of a 2 percent slope from the inside of the pond embankment edge away from the pond.

14. The level of wastewater between Pond Nos. 1 and 2 is controlled via an overflow weir and pipe assembly. In addition, a flow splitter effluent distribution-piping manifold is used to allow effluent distribution between Pond Nos. 1 and 2. Only Pond No. 1 is equipped with a mechanical aeration device.
15. Two separate pump houses are located at the facility. The Pond No. 1 Pump House is near the southeast corner of Pond No. 1. This contains a single pump used to draw effluent from Pond No. 1 for the spray aerator in Pond No. 1 or the trickling filter. In addition, the pump may also be used to pump effluent into Pond Nos. 2 and 3. The Pond No. 2 Pump House is located south of Pond No. 3 and is equipped with two pumps with timer controls, two different filtration methods (screened and centrifugal spin), and a valve system that allows the effluent to be pumped back to Pond Nos. 1, 2 and/or 3, and to either the upper or lower leachfields. The pumps have a hydraulic capacity of at least 60 gpm.
16. Both the upper and lower leachfields were constructed in 1986. The upper leachfield is comprised of 1,950 feet of leachline and the lower leachfield consists of 1,500 feet of leachline. Each of the leachfields were constructed with 4-inch diameter perforated pipe in a three foot wide by three foot deep trench with 18-inches of gravel underlying the pipe. Both of the leachfields are equipped with observation risers to monitor the level of wastewater in each of the trenches.
17. The upper leachfield provides approximately 2.10 gpd/square feet of infiltration while the lower leachfield provides approximately 4.44 gpd/square feet of infiltration. Based on these infiltration rates, the existing upper leachlines have a disposal capacity of up to 12,285 gpd and the lower leachlines can dispose up to 20,000 gpd.
18. The RWD states that wastewater is currently distributed to the upper and lower leachfields via gravity; however, the Discharger plans to upgrade to a uniform pressure dosed system.
19. Monitoring results from October 2000 through March 2004 show that the wastewater in the ponds has the following characteristics:

<u>Parameter</u>	<u>Units</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Average</u>
Biochemical Oxygen Demand	mg/L	<2.0	11	5.0
Nitrate as nitrogen	mg/L	<0.05	0.71	0.16
Settable Solids	mg/L	<0.1	0.2	0.06
Total Dissolved Solids	mg/L	118	175	138
pH	pH Units	6.6	7.0	6.8
Specific Conductivity	µmhos/cm	251	7.0	6.8

20. It is noted that the effluent is not disinfected. Although the Discharger has not analyzed the effluent for total coliform, the value is expected to be greater than 1,600 MPN/100 ML.
21. The Discharger has completed water balances using the current population of 224 persons and a future population of 300 persons. The water balances were prepared based on a design average

daily flow of both 22,400 gpd and 30,000 gpd, a pond capacity of 5,100,000 gallons, an upper leachfield disposal rate of approximately 2.10 gpd/square feet and a lower leachfield disposal rate of approximately 4.44 gpd/square feet, local evaporation rates, and a 100-year total precipitation rate.

22. The water balance indicates adequate storage and disposal capacity for a population of 300 persons with an average dry weather wastewater flow of 30,000 gpd only if an additional 1,250 feet of 3-foot wide leach line trench or equivalent is installed in the upper leachfield area. With the additional leachlines, the disposal capacity will be increased from 32,285 gpd to 40,144 gpd.

Collection System Issues

23. The RWD indicates that over the last 22 years a total of four sewer overflows occurred at the facility. The most recent and largest of these spills occurred in December 2003 when Weimar Institute reported a spill estimated at approximately 65,000 gallons that was caused by a previously unknown hole in the top of an elevated section of exposed cast iron sewer pipe. The sewer pipe was cleared of roots, an adjacent tree was removed, and a saddle tree was clamped over the damaged portion of pipe. The untreated wastewater flowed into Coyote Creek, a tributary to Wolley Creek and Lake Combie.
24. The RWD states that no collection system hydraulic capacity problems have been observed or reported during the last 22 years.
25. No major collection system improvements have been conducted within the last three years. However, the RWD indicates that approximately 800 to 1,600 feet of 3 to 6-inch diameter pipe was replaced in 1983 with SDR35 PVC sewer pipe.
26. The RWD states that in 2004 approximately 250 feet of 4-inch diameter sewer line was installed in the Volunteer RV parking area of the Main Campus Area. Currently, approximately 250 feet of existing 6-inch diameter clay tile and Orangeburg sewer line is being replaced in the southern branch of the sewer line below Broadman Canal, under the pond access road and down to the last manhole prior to the Imhoff tank. This replacement is the result of severely deteriorated sewer line.
27. The RWD states that dye testing performed in 2000 and 2001 to assess areas of rainfall runoff infiltration into the sewer lines did not indicate infiltration.

Proposed Collection System Improvements

28. The RWD states that the location of the existing sewer line collection system and laterals is not clearly documented and that inspection and mapping of the system is recommended. The Discharger plans to map the sewer line at approximately 1,000 feet per year.

29. The Discharger states that approximately 500 feet of deteriorated clay or Orangeburg sewer line pipe will be replaced each year with SDR35 PVC.
30. The Discharger plans to complete an initial system assessment and workplan of recommended repairs or collection system replacement by 1 April 2005.
31. The RWD states that the Discharger will repair cap cleanouts and install protective cover boxes as necessary; repair and replace broken and/or cracked manhole assemblies including cover ring, body, pipe connections, and bottom flow channel by 1 June 2005.

Proposed Wastewater Treatment System Improvements

32. The Discharger proposes to recoat the west wall of the concrete Imhoff tank with an appropriate water proofing sealer by 1 January 2005. This proposed repair is the result of minor seepage observed during June 2004.
33. The RWD states that by 1 January 2005 the Discharger will install a galvanized screen at the overflow slot of the Imhoff tank to capture floating solids on the water surface.
34. The Discharger plans to verify the installation of chains and locks on pond gate valves by 1 January 2005.
35. The RWD states that the Discharger plans to install sewage treatment warning signs at the Imhoff tank, tricking filter, each of the three ponds and pump houses by 1 February 2005.
36. The RWD states that by 1 February 2005, the Discharger will verify that (a) the existing elevation of the pond levees meets original design elevation, (b) that the new vertical standpipe provides a minimum of 2-feet of freeboard, and (c) the existing gravity overflow to the Pond No. 1 Pump House sump complies with a minimum of 2-feet of freeboard.
37. The Discharger plans to install a permanent water level measurement scale and an emergency gravity overflow culvert from Pond No. 2 to Pond No. 3 by 1 February 2005.
38. The RWD states that the Discharger recommends the installation of a data logger at the dosing chamber to record the dosing event times, allowing the determination of hourly flows versus average daily or weekly flows using the existing digital event counter. This information will allow the Discharger to correlate between increasing flows and precipitation to allow determination of actual infiltration rates. The data logger is to be installed by 1 March 2005.
39. To prevent an overflow from the dosing chamber, the Discharger recommends the installation of a 6-inch pipe or equivalent overflow bypass from the dosing chamber to the trickling filter by 1 June 2005.

Other Proposed Improvements

40. The RWD states that the Discharger proposes to obtain cost estimates for (a) septic tank pumping directly from the Imhoff tank, (b) modifying a water tight bin to containerize solids removed from

the sludge drying beds, and (c) modifying the sludge drying beds to a water-tight condition, including installing a concrete bottom slab and sealing the perimeter walls.

41. The Discharger plans to install a 4-inch minimum thickness concrete water-tight sloping slab in the southern portion of the sludge drying bed. This installation will include an under drain to Pond No. 1 to allow solids removal from the Imhoff tank for disposal at an approved landfill. Work will be completed by 1 February 2005.
42. The Discharger proposes by 1 October 2005 to construct a 2-foot high by 4-foot wide earthen berm around the lower perimeter of the Imhoff tank and sludge drying beds to contain liquid and solid wastes discharged from structural failure or overtopping of the Imhoff tank.
43. The RWD states that the Discharger plans investigate the source of groundwater seepage from the bank uphill from the Imhoff tank and divert water away from the Imhoff tank area with a subsurface gravel drain by 1 October 2005.

Sanitary Sewer Collection System

44. The RWD states that in the event of an electrical power failure and loss of pumping, portable electrical generators are available.
45. There are no alarms currently associated with the wastewater system. The RWD states that a standard alarm for the system would consist of a remote sewage pump lift station high water alarm. This Order requires that the alarm be installed.
46. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system, and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage/conveyance facilities.
47. At this site, sanitary sewer overflows consist of domestic sewage. The chief causes of sanitary sewer overflows could include grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and contractor caused blockages.
48. Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, and other pollutants. Sanitary sewer overflows can cause temporary exceedences of applicable water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the area.
49. The Discharger is expected to take all necessary steps to adequately maintain, operate, and prevent discharges from its sanitary sewer collection system. The RWD states that the Discharger has been operating under a March 1996 Operation and Maintenance plan. This Order requires that the Discharger submit and implement a revised Operation and Maintenance plan.

Site Specific Conditions

50. The topography of the site consists of slopes ranging from slightly to very steeply sloping hillsides ranging from 10 to 65 percent.
51. The soils series beneath the site are (1) Sites Loam Series which is well drained soil underlying the Weimar Institute Campus Area, (2) the Mariposa-Josephine Complex Series located on the lower ridges and hillside slopes, and (3) the Xerofluent Series which is located in the lowest areas adjacent to Coyote Creek.
52. In 1998, during a site characterization associated with seven underground storage tanks, two soil borings were advanced to a depth of 50 feet below ground surface (bgs) using hollow stem augers. Soils encountered in these two borings identified silty clays to a maximum depth of 11 feet, underlain by weathered meta-volcanics (schist) with clay. The RWD states that groundwater was not encountered in these borings.
53. Four groundwater wells are located approximately 1,800 to 2,100 feet from the treatment and disposal areas. The depth of wells range from 150 to 550 feet bgs, and the groundwater in these wells range from approximately 31 to 200 feet bgs. Groundwater flow is influenced by the site topography and probably flows down slope from east to west.
54. The average annual precipitation for this area is approximately 45 inches. The 100 year return rainfall is approximately 81 inches. Precipitation data is based on information obtained from the County of Placer Land Development Manual Isohyetal Map.
55. The facility is in the Lake Combie Hydrologic Basin (No. 516.33), as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.
56. The RWD states that the upper leachfield was constructed in variable soils with highly permeable soils near surface underlain by moderate to low permeability clayey soils and weathered meta-sedimentary material between 2 and 12 feet bgs.
57. The RWD indicates that the lower leachfield was constructed in very permeable soils to a depth of approximately 12 feet bgs at the downhill portion of the field. Eleven percolation test borings within the location of the lower leachfield indicate an average percolation rate of 27 minutes per inch at a depth of 36 inches.
58. Potable water for Weimar Institute is provided by the Weimar Water Company. Selected results from a sample collected on 4 September 2003 are as follows:

<u>Parameter</u>	<u>Units</u>	<u>Results</u>
Nitrate as Nitrogen	mg/L	<0.1
Nitrite as Nitrogen	mg/L	<0.1
Sulfate	mg/L	0.71
Chloride	mg/L	3.0
Total Dissolved Solids	mg/L	34

<u>Parameter</u>	<u>Units</u>	<u>Results</u>
Specific Conductivity	µmhos/cm	67
Turbidity	NTU	<0.10
pH	pH units	7.6

Basin Plan, Beneficial Uses and Regulatory Considerations

59. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Board. Pursuant to Section 13263(a) of the California Water Code, waste discharge requirements must implement the Basin Plan.
60. Surface water drainage from the WWTF is to Coyote Creek, which is a tributary to Wolley Creek and Lake Combie. The designated beneficial uses of Lake Combie are municipal and domestic supply; agricultural supply; power generation; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; migration of aquatic organisms; spawning, reproduction and/or early development of warm and cold freshwater aquatic organisms; and wildlife habitat.
61. The designated beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, and industrial service and process supply.

Groundwater Degradation

62. State Board Resolution No. 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) requires a regional board in regulating the discharge of waste to maintain high quality waters of the state (i.e., background water quality) until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than as described in plans and policies. The discharge is required to meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and highest water quality consistent with maximum benefit to the people will be maintained.
63. The Regional Board has considered antidegradation pursuant to State Board Resolution No. 68-16, and finds that the Discharger has not provided the required demonstration to be allowed to cause groundwater degradation to be allowed to cause groundwater degradation, and therefore none is authorized.
64. The incremental addition of dissolved salts through water usage (about 275 mg/L) is within the normal range for domestic use, and is reasonable considering modern water conservation practices. An interim TDS effluent limitation of 310 mg/L (275 mg/L plus the TDS concentration of 34 mg/L for the potable water; Finding No. 58) represents no cost or change in practice for the Discharger, and limits salt degradation to a reasonable amount while providing some protection of

the groundwater beneath the leachfields while background groundwater concentrations are determined.

Regulatory Considerations

65. The State Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The design flow at this wastewater treatment plant is less than 1.0 mgd and therefore the Discharger is not required to apply for storm water NPDES permit.
66. The action to update WDRs for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), in accordance Title 14, California Code of Regulations (CCR), Section 15301.
67. Section 13267(b) of the CWC provides that

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The technical reports required by this Order and the attached Monitoring and Reporting Program No. __ are necessary to assure compliance with these waste discharge requirements. The Discharger operates facilities that discharge waste subject to this Order.

68. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells, as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to CWC Section 13801, apply to all monitoring wells.
69. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27. While the discharge is exempt from Title 27, the data analysis methods of Title 27 may be appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.
70. The discharge authorized herein and the treatment and storage facilities associated with the discharge, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), Section 20380 et seq. (hereafter Title 27). The exemption, pursuant to Title 27 CCR Section 20090(a), is based on the following.

- a. The waste consists primarily of domestic sewage and treated effluent;
 - b. The waste discharge requirements are consistent with water quality objectives; and
 - c. The treatment and storage facilities described herein are associated with a public entity.
71. Pursuant to California Water Code Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Public Notice

72. All of the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
73. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and were given the opportunity to submit their written views and recommendations and to be heard in a public meeting.
74. In a public meeting, all comments pertaining to the discharge were heard and considered.

IT IS HEREBY ORDERED that Order No. 89-128 is rescinded and, pursuant to Sections 13263 and 13267 of the California Water Code, Weimar Institute, Inc., its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder, shall comply with the following:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.]

A. Discharge Prohibitions:

1. Discharge of wastes to surface waters or surface water drainage courses (including storm water diversion features) is prohibited.
2. Bypass or overflow of untreated or partially treated waste is prohibited.
3. Discharge of sewage from a sanitary sewer system at any point upstream of the Imhoff tank or wastewater pond is prohibited. Discharge of treated wastewater other than at the approved wastewater ponds or leachfields is prohibited.
4. Discharge of waste classified as 'hazardous', as defined in Sections 2521(a) of Title 23, CCR, Section 2510, et seq., (hereafter Chapter 15), or 'designated' as defined in Section 13173 of the California Water Code, is prohibited.

5. Surfacing of wastewater outside or downgradient of the wastewater storage ponds is prohibited.
6. Surfacing of wastewater within or downgradient of the leachfields is prohibited.
7. The presence of leachate within one foot of the lowest finished field grade along a leachline is prohibited.

B. Discharge Specifications:

1. The monthly average dry weather inflow to the WWTP shall not exceed 22,500 gpd. If the Discharger wishes to increase the average monthly dry weather flow to 30,000 gallons then the Discharger shall submit the technical report required by Provision G.1.m of this Order. Upon approval by the Executive Officer, the discharge may increase to 30,000 gpd.
2. Disposal of effluent shall be confined to the wastewater ponds and the leachfields.
3. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations.
4. Neither the treatment nor the discharge shall cause a condition of pollution or nuisance as defined by the California Water Code, Section 13050.
5. Objectionable odor originating at the facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.
6. As a means of discerning compliance with Discharge Specification No. 5, the dissolved oxygen content in the upper zone (one foot) of the wastewater ponds shall not be less than 1.0 mg/L.
7. The wastewater treatment and storage ponds shall not have a pH of less than 6.5 or greater than 8.4.
8. Public contact with wastewater shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.
9. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.
10. The wastewater treatment, storage, and disposal system shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
11. The WWTF shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary infiltration and inflow during the winter months. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

12. The freeboard in the effluent storage ponds shall never be less than two feet as measured vertically from the water surface to the lowest point of overflow.
13. By **1 November** of each year, available pond storage capacity shall at least equal the volume necessary to comply with Discharge Specifications No. 11 and No. 12.
14. The wastewater ponds shall be managed to prevent the breeding of mosquitoes. In particular,
 - a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the waste surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, and/or herbicides.
 - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

C. Effluent Limitations

1. Effluent discharged to the leachfields shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
BOD ¹	mg/L	40	80
Total Dissolved Solids	mg/L	310	--

¹ BOD denotes 5-day biochemical oxygen demand at 20° C.

2. Effluent discharged to the wastewater ponds and/or leachfield shall not have a pH of less than 6.5 or greater than 8.4.

D. Septic Tanks and Leachfield Specifications

The Discharger shall complete the following actions regarding the septic tanks and leachfields:

1. Inspect each septic tank at least annually.
2. Properly maintain the septic tanks, including pumping a tank when any one of the following conditions exist, or can be reasonably projected to occur before the next inspection of a tank:
 - a. The combined thickness of sludge and scum exceeds one-third of the tank depth of the first compartment;
 - b. The scum layer is within three inches of the outlet device; or,
 - c. The sludge layer is within eight inches of the outlet device.

3. Promptly repair or replace septic tanks that are cracked or otherwise damaged.
4. Annually inspect, and if necessary, clean the leachfield's distribution piping.
5. Cut vegetation in the leachfield areas as needed to prevent the threat of root intrusion into the leachlines and drainage rocks, and remove the vegetative litter.

E. Solids Disposal Specifications:

Sludge, as used in this document, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screenings generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTF. Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

1. Sludge and solid waste shall be removed from screens, sumps, ponds, and tanks as needed to ensure optimal plant operation.
2. Treatment and storage of sludge generated by the WWTF shall be confined to the WWTF property, and shall be conducted in a manner that precludes infiltration of waste constituents into soils in a mass or at concentrations that will violate the Groundwater Limitations of this Order.
3. Any storage of residual sludge, solid waste, and biosolids at the WWTF shall be temporary, and the waste shall be controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or at concentrations that will violate the Groundwater Limitations of this Order.
4. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at disposal sites (i.e., landfills, WWTFs, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this specification.
5. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water quality control board. In most cases, this will mean the General Biosolids Order (State Water Resources Control Board Water Quality Order No. 2004-0012-DWQ, *General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities*). For a biosolids use project to be covered by the General Biosolids Order, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.

6. Use and disposal of biosolids shall comply with the self-implementing federal regulations of Title 40, Code of Federal Regulations (CFR), Part 503, which are subject to enforcement by the U.S. EPA, not the Regional Board. If during the life of this Order, the State accepts primacy for implementation of 40 CFR 503, then the Regional Board may also initiate enforcement where appropriate.

F. Groundwater Limitations:

Release of waste constituents from any system component associated with the wastewater treatment facility shall not cause groundwater under and beyond that system component (as determined by an approved well monitoring network) to contain any constituents in concentrations greater than ambient background conditions, and shall not cause or contribute to the violation of any Basin Plan narrative or numeric water quality objective.

G. Provisions:

1. The following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared as described by Provision G.2.
 - a. By **1 September 2005**, the Discharger shall provide a technical report that documents the following improvements to the collection and wastewater treatment system:
 - i. Installation of a flow meter to accurately measure wastewater flows from the Academy Center and Residential Duplexes Collection System;
 - ii. Installation of a data logger at the dosing chamber to record the dosing event times allowing the determination of hourly flows;
 - iii. Installation of a 6-inch pipe or equivalent overflow bypass from the dosing chamber to the trickling filter;
 - iv. Inspection of all cap cleanouts, and repair and replace as necessary; install protective cover boxes; repair and replace as necessary broken cracked manhole assemblies including cover ring, body, pipe connections, and bottom flow channel;
 - v. Recoating the west wall of the concrete Imhoff tank with the appropriate water proofing sealer;
 - vi. Installation of a galvanized screen at the overflow slot of the Imhoff tank to capture floating solids;
 - vii. Verification of the installation of chains and locks on pond gate valves;
 - viii. Installation of sewage treatment warning signs at the Imhoff tank, trickling filter, each of the three wastewater ponds, and the pump houses;

- ix. Verification that (a) the existing elevation of the pond levees meets original design elevation, (b) that the new vertical standpipe provides a minimum of 2-feet of freeboard, and (c) the existing gravity overflow to the Pond No. 1 pump house sump complies with a minimum of 2-feet of freeboard;
 - x. Installation of a permanent water level measurement scale and an emergency gravity overflow culvert from Pond No. 2 to Pond No. 3; and
 - xi. Installation of a concrete slab in the sludge drying bed including an under drain to Pond No. 1.
- b. By **1 October 2005**, the Discharger shall submit a workplan to inspect and map 1,000 feet of collection system each year. The workplan shall describe the inspection methods (i.e. smoke testing, video surveying) and provide a schedule of the proposed work considering that at least 500 feet of deteriorated clay and Orangeburg sewer pipe shall be replaced with SDR35 PVC each year. The schedule for completing this work shall not extend beyond **1 October 2010**.
- c. By **1 November 2005**, the Discharger shall submit a workplan that describes the upgrade to the upper and lower leachfields from sequential gravity distribution to uniform pressure dose. If the Discharger chooses to increase the inflow to the WWTF, the workplan shall also provide details of the 1,250 feet of leachline expansion proposed for the upper leachfield.
- d. By **1 November 2005**, the Discharger shall provide written documentation that a remotely operated alarm system has been installed at locations within each of the two gravity collection systems (Campus Collection System Branch, and the Academy Center and Residential Duplexes Collection System Branch) to notify staff in the event of a power loss or malfunction.
- e. By **1 December 2005**, the Discharger shall submit a *Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan* (SSS Plan) that describes the actions designed to prevent or minimize the potential for collection system overflows. The Discharger shall maintain the SSS Plan in an up-to-date condition and shall amend the SSS Plan whenever there is a change (e.g., in the design, construction, operation, or maintenance of the effluent collection system) that materially affects the potential for overflows, or whenever there is an overflow. The Discharger shall ensure that the up-to-date SSS Plan is readily available to operating personnel at all times and that the personnel are familiar with it.
- i. At a minimum, the operation and maintenance portion of the SSS Plan shall contain or describe the following:
 - 1. Detailed maps of the effluent collection system, identifying locations of septic tanks, sewer mains, manholes, and cleanouts;
 - 2. A detailed listing of elements to be inspected, a description of inspection procedures and inspection frequency, and sample inspection forms;

3. A schedule for routine inspection of all pipelines, valves, and other key system components. The inspection/testing program shall be designed to reveal problems that might lead to accidental spills and ensure that preventive maintenance is completed;
4. Provisions for repair or replacement of defective equipment.
- ii. At a minimum, the overflow prevention and response portion of the SSS Plan shall contain or describe the following:
 1. Identification of areas of the collection system that historically have overflowed and an evaluation of the cause of the overflow;
 2. Maintenance activities that can be implemented to address the cause of the overflow and means to prevent future overflows;
 3. Procedures for responding to overflows designed to minimize the volume of overflow that enters surface waters, and minimize the adverse effects of overflows on water quality and beneficial uses; and
 4. Steps to be taken when an overflow or spill occurs, and procedures that will be implemented to ensure that all overflows and spills are properly identified, responded to and reported to appropriate agencies, and if necessary, the public.
- f. By **1 December 2005**, the Discharger shall submit and implement a revised *Operation and Maintenance (O&M) Plan* for the Weimar Institute WWTF. The O&M Plan shall instruct field personnel on how to manage the day-to-day discharge operations to comply with the terms and conditions of this Order and how to make field adjustments, as necessary, to optimize the effectiveness and life of the leachfields and preclude nuisance conditions (e.g., surfacing wastewater). It shall also include a troubleshooting flow chart with recommend remedial actions and a description of notification requirements. The O&M Plan shall address management of the WWTF in sufficient detail to optimize compliance with this Order, and most particularly Septic Tanks and Leachfield Specifications D.1 to D.5, including the following:
 - i. An inspection procedure for checking the integrity of the septic tanks.
 - ii. A description of the type, location, and procedure for calibration of the flow meter(s) installed to comply with the Monitoring and Reporting Program.
 - iii. The procedures to be implemented to assure that wastewater is evenly distributed within the disposal trenches, and to assure that wastewater will not be disposed of when the depth of wastewater in any trench is within 12 inches of the ground surface.
- g. By **1 December 2005**, the Discharger shall submit a *Groundwater Monitoring Well Installation Workplan*. The workplan shall describe the proposed installation of groundwater monitoring wells around the wastewater ponds, the upper leachfield, and the lower leachfield to adequately characterize the groundwater quality upgradient and downgradient of the wastewater ponds and leachfields. Every monitoring well shall be constructed to yield

representative samples from the uppermost layer of the uppermost aquifer and to comply with applicable well standards. The workplan shall be consistent with, and include the items listed in, the first section of Attachment C, including a Groundwater Sampling and Analysis Plan.

- h. By **1 December 2005**, the Discharger shall provide a technical report that documents the following improvements to the collection and wastewater treatment system:
 - i. Installation of a 6-inch pipe or equivalent overflow bypass from the dosing chamber to the trickling filter to prevent an overflow from the dosing chamber;
 - ii. Construction of a 2-foot high by 4-foot wide earthen berm around the lower perimeter of the Imhoff tank and sludge drying beds to contain liquid and solid wastes discharged from structural failure or overtopping of the Imhoff tank; and
 - iii. Determination of the source of groundwater seepage from the bank uphill from the Imhoff tank and diversion of water away from the Imhoff tank area with a subsurface gravel drain.
- i. By **1 June 2006**, the Discharger shall submit a technical report showing that the upgrades to the upper and lower leachfields from sequential gravity distribution to uniform pressure dose have been completed and are fully operational.
- j. By **1 June 2006**, the Discharger shall submit a *Groundwater Monitoring Well Installation Report* that describes the installation of groundwater monitoring wells and contains the items found in the second section of Attachment C.
- k. By **1 September 2007**, the Discharger shall submit a *Background Groundwater Quality Study Report*. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and comparison of background groundwater quality to that in wells used to monitor impacts from the discharge. Determination of background quality should be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least four consecutive quarterly (plus any more frequent) groundwater monitoring events.
- l. **At least 60 days prior** to any sludge removal and disposal, the Discharger shall submit a *Sludge Management Plan*. The plan shall estimate the quantity of sludge to be removed from the Imhoff tank and wastewater ponds; method of removal; method of drying; leachate and runoff controls for any temporary on-site biosolids drying and storage areas to prevent water quality impacts; a sampling and analysis plan; and the name, location, and permitting information for the selected biosolids disposal site.
- m. **At least 90 days prior** to the Discharger's proposal to increase the monthly average inflows to the WWTF, the Discharger shall submit a technical report that demonstrates how the leachline expansion will ensure adequate treatment and disposal for an average dry weather

inflow not exceeding 30,000 gpd. The technical report must be approved by the Executive Officer prior to increasing the flows.

2. In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall include the professional's signature and/or stamp of the seal.
3. The Discharger shall comply with Monitoring and Reporting Program No. _____, which is part of this Order, and any revisions thereto as ordered by the Executive Officer
4. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
5. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with the discharge limits specified in this Order.
6. The Discharger shall provide certified wastewater treatment plant operators in accordance with Title 23 of the California Code of Regulations, Division 3, Chapter 26.
7. As described in the Standard Provisions, the Discharger shall report promptly to the Regional Board any material change or proposed change in the character, location, or volume of the discharge.
8. Upon the reduction, loss, or failure of the sanitary sewer system resulting in a sanitary sewer overflow, the Discharger shall take any necessary remedial action to (a) control or limit the volume of sewage discharged, (b) terminate the sewage discharge as rapidly as possible, and (c) recover as much as possible of the sewage discharged (including wash down water) for proper disposal. The Discharger shall implement all applicable remedial actions including, but not limited to, the following:
 - b. Interception and rerouting of sewage flows around the sewage line failure;
 - c. Vacuum truck recovery of sanitary sewer overflows and wash down water;
 - d. Use of portable aerators where complete recovery of the sanitary sewer overflows are not practicable and where severe oxygen depletion is expected in surface waters; and
 - e. Cleanup of sewage-related debris at the overflow site.

9. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
10. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater includes rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.
11. The Discharger shall submit to the Regional Board on or before each compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharge shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board in writing when it returns to compliance with the time schedule.
12. In the event of any change in control or ownership of land or waste discharge facilities described herein, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.
13. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed herein or by the Executive Officer pursuant to Section 13267 of the CWC. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
14. A copy of this Order shall be kept at the operations facility for the wastewater treatment facility. Key operating personnel shall be familiar with its contents.
15. The Regional Board will review this Order periodically and will revise requirements when necessary.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on _____.

THOMAS R PINKOS, Executive Officer